Mandibular all-on-four therapy using angled implants: a three-year clinical study of 857 implants in 219 jaws.

Butura CC, Galindo DF, Jensen OT.

Source

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Abstract

Immediate function with Brånemark implants is well established for the mandible. This article describes a series of 857 implants placed consecutively in which very few implants failed or lost bone despite the dynamic healing conditions of simultaneous dental extractions and bone leveling. Though these findings are relatively early, 3 years or fewer, it appears that the immediate function All-on-Four procedure can be done with a high degree of confidence for the mandible--putting into question the need for additional implants.

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The all-on-four immediate function treatment concept with NobelActive implants: a retrospective study.

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Source

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Abstract

The All-on-Four treatment concept provides patients with an immediately loaded fixed prosthesis supported by 4 implants. This single-center retrospective study evaluated the concept while using the NobelActive implant (Nobel Biocare, Gothenburg, Sweden). Seven hundred eight implants placed in 165 subjects demonstrated a cumulative survival rate of 99.6% (99.3% in maxilla and 100% in the mandible) for up to 29 months of loading. The definitive prosthesis survival rate was 100%.
The rehabilitation of completely edentulous maxillae with different degrees of resorption with four or more immediately loaded implants: a 5-year retrospective study and a new classification.

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Source
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Abstract

PURPOSE:
To report the long-term outcome of immediately loaded implants in the rehabilitations of completely edentulous maxillae with different classifications. The secondary aim was to evaluate the influence of possible explanatory variables on the incidence of biological and mechanical complications.

MATERIAL AND METHODS:
In total, 221 patients were consecutively included and classified into four groups that allowed implant placement in a vertical position: Group 1 (bone available up to first molar), Group 2 (bone available up to second premolar), Group 3 (bone available up to first premolar) and Group 4 (bone available up to canine). Outcome measures were prosthesis and implant survival, and biological and mechanical complications.

RESULTS:
A total of 995 implants were placed. Eighteen patients (8% of the sample) dropped out of the study. After 5 years, three patients lost their prosthesis due to implant failures, giving a survival rate of 98.6%; 25 patients lost 41 implants, giving a survival rate of 88.7% (25/221) and an implant-specific survival rate of 95.8% (41/995). According to the edentulism classification, the patient-specific survival rate after 5 years was 78.6% for Group 1, 89.3% for Group 2, 92.4% for Group 3 and 91.7% for Group 4. In total, 129 biological complications occurred affecting 129 implants (13%) in 66 patients (30%). Smoking was identified as a risk factor for the incidence of biological complications with an OR of 3.03 (95% CI 2.03-4.56; P < 0.0001), while 'gender' (male; OR = 0.56; 95% CI 0.37-0.85; P = 0.007) was a factor that had a protective effect. A total of 170 mechanical complications occurred, affecting 170 implants (17%) in 71 patients (38%). Bruxism was identified as a risk factor for the incidence of mechanical complications with an OR of 60.95 (95% CI 21.40-173.54; P < 0.0001), while a Group 2 edentulism classification had a protective effect for the incidence of mechanical complications with an OR of 0.22 (95% CI 0.07-0.71; P = 0.011).
**CONCLUSIONS:**

It is a viable treatment option to rehabilitate completely edentulous maxillae using four implants or more to support a fixed prosthesis.

**Immediate postextraction implant placement with immediate loading for maxillary full-arch rehabilitation: A two-year retrospective analysis.**

**Abstract**

**BACKGROUND:**

There are few studies in the literature regarding immediate postextraction implant placement with immediate loading in the maxilla. These studies have only small cohorts. Therefore, the authors conducted a retrospective study to help fill this knowledge gap.

**METHODS:**

Between January 2001 and January 2009, 65 participants (32 women, 33 men) with an average age of 60.5 years (age range, 43-83 years) received 334 dental implants, which were placed in postextraction sockets and loaded immediately. The follow-up period for this retrospective study was two years.

**RESULTS:**

All prostheses were stable, and only seven implants failed during the follow-up, for a 100 percent prosthetic survival rate and a 97.9 percent implant survival rate at two years. The mean (standard deviation) implant bone level measured 0.50 (0.27) millimeter at insertion, 1.90 (0.51) mm at one year and 2.06 (0.49) mm at two years.

**CONCLUSIONS:**

The results of this retrospective study showed that the survival rate of immediately loaded postextraction implants is comparable with that reported for traditional delayed implants in the maxilla.

**CLINICAL IMPLICATIONS:**

Immediate loading of four to six implants placed in extraction sockets may be a valid way to treat the edentulous maxilla.
Bone regeneration around implants in periodontally compromised patients: a randomized clinical trial of the effect of immediate implant with immediate loading.

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Source

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Abstract

BACKGROUND:

This 2-year randomized clinical trial compared bone regeneration and esthetic outcome between immediate and conventional loading of dental implants placed immediately after extraction in patients with a history of periodontal disease.

METHODS:

Patients were randomly assigned to receive immediate implants with either immediate loading or conventional loading after 3 months. Both groups received a periodontal flap, tooth extraction, implant placement, allograft bone, and membrane placement. The immediate loading group received a temporary crown. In the conventional loading group primary closure was achieved. All patients were followed up at 3, 6, 12, and 24 months. Evaluation included radiographic bone changes, papillary esthetic outcome, and implant survival rate.

RESULTS:

Seventy-two patients were recruited into the study. However, 60 patients received immediate implant placement after extraction: 30 with conventional loading and 30 with immediate loading. In the immediate loading group the implant survival rate at 2 years was 96.7%, and the mean bone gain was 1.19 mm. The corresponding figures in the conventional loading group were 93.3% and 1 mm. The gain in bone level occurred mainly from baseline to 1 year postoperatively in both groups (P <0.001). The papilla index decreased from baseline to 1 year in both groups (P <0.001) and changed only slightly thereafter. There were no significant differences between the two groups in the amount of bone gain or papilla index change during 2 years.
**CONCLUSIONS:**

Immediate loading of a single implant placed in a fresh extraction site in periodontally compromised patients resulted in similar bone gain and soft tissue esthetic outcomes compared to delayed loading. Primary closure and delayed loading to ensure bone regeneration around implants were not critical in this study.

PMID:

20681808

[PubMed - indexed for MEDLINE]

**A prospective study of immediate functional loading, following the Teeth in a Day protocol: a case series of 55 consecutive edentulous maxillas.**

Balshi SF, Wolfinger GJ, Balshi TJ.

**Source**

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**Abstract**

**BACKGROUND:**

Immediate loading of dental implants is increasingly gaining recognition as a viable option for both patient and clinician.

**PURPOSE:**

The aim of this study was to evaluate the results of 55 patients in a clinical investigation of immediate functional loading of Brånemark System implants (Nobel Biocare USA, Yorba Linda, CA) in edentulous maxillas. Its further purpose is to suggest a reliable and evidence-based protocol for immediate implant loading of full-arch prostheses in the maxilla.

**MATERIALS AND METHODS:**

A total of 552 Brånemark System implants were placed in immediate extraction or healed sites; a mean number of 10 implants were placed per patient. The healthy subjects in need of full-arch maxillary implant reconstruction were treated between December 1999 and February 2004; 522 of the 552 implants were immediately loaded with screw-retained all-acrylic fixed prostheses at the time of surgery. Approximately 4 to 6 months later, the 30 submerged implants were uncovered, and a definitive metal-reinforced prosthesis was delivered to each patient.
RESULTS:

The immediately loaded implant cumulative survival rate was 99.0% for these patients. The prosthesis survival rate was 100%.

CONCLUSIONS:

The results of this prospective study of full-arch maxillary immediate loading suggests that this protocol is suitable for most patients in need of full maxillary implant reconstruction. The protocol, as shown in this study, is highly successful in providing a lasting state of osseointegration as the foundation for long-term stability of screw-retained fixed prostheses.

The use of immediate implant placement for the replacement of a periodontally involved malaligned lateral incisor: a clinical report.

Chu FC, Deng FL, Siu AS, Chow TW.

Source

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Abstract

Localized severe chronic periodontitis is often seen in middle-aged patients, particularly when plaque control for malaligned teeth is not satisfactory. While orthodontic treatment can realign such teeth with reduced periodontal support, esthetics may be compromised by gingival recession due to preexisting bone loss and resolution of inflammation after periodontal treatment. This clinical report describes how a malaligned maxillary lateral incisor with severe periodontitis was replaced by an immediately placed implant and implant-supported crown with a good esthetic outcome.

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[PubMed - indexed for MEDLINE]

Immediate provisionalization of dental implants placed in fresh extraction sockets using a flapless technique.

Crespi R, Capparé P, Gherlone E, Romanos G.

Source

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Abstract
The aim of this clinical study was to evaluate the 24-month clinical outcomes of immediate provisionalization of dental implants placed in fresh extraction sockets using a flapless technique. Fifteen patients were included under strict inclusion and exclusion criteria. All patients required one or two teeth to be extracted for lesions with a hopeless prognosis in the maxillary monoradicular or first premolar region. Twenty implants were placed immediately after tooth extraction, and immediate provisionalization was performed. Sixteen implants had a diameter of 5 mm, and four implants had a diameter of 3.80 mm, all with a 13-mm length. After 24 months of follow-up, a cumulative survival rate of 100% was reported for all implants. Modified Bleeding Index (mBI), modified Plaque Index (mPI), probing depth (PD), marginal gingiva level (MGL), and keratinized mucosa (KM) remained stable for up to 24 months. Mean MGL at 24 months was 0.22 ± 0.15 mm; no significant changes occurred in MGL between baseline and 24 months. Mean KM remained stable from baseline to 24 months. At 24 months, a mean bone loss of 0.83 ± 0.52 mm was measured. The results of this study indicate that flapless surgery for immediately provisionalized implants placed in fresh extraction sockets provides soft tissue and marginal bone maintenance for up to 24 months of follow-up.

Immediate and early function of implants placed in extraction sockets of maxillary infected teeth: a pilot study.

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Source
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Erratum in


Abstract

STATEMENT OF PROBLEM:

Infection in tooth extraction sites has traditionally been considered an indication to postpone implant placement until the infection has been resolved.

PURPOSE:

The aim of this study was to evaluate the survival rate of immediate and early-loaded implants placed immediately after extraction of teeth with endodontic and periodontal lesions or root fracture in the maxilla.

MATERIAL AND METHODS:

Thirty-three patients with teeth judged to be unrestorable because of endodontic or periodontal lesions or root fracture were included in the study. After tooth extraction, 1 to 6 implants (n=76) were placed in each patient using flap or flapless surgery in fresh extraction sockets, and a fixed provisional prosthesis was placed immediately or within 36 hours. Definitive prostheses were inserted after 6 to 12 months. The treatment protocol considered
initial implant and prosthesis stability and control of the inflammatory response. Clinical and radiographic analyses were performed to evaluate the treatment outcome. Data were reported using descriptive statistics.

RESULTS:

After 1 year, 2 implants were lost, resulting in a 97.4% survival rate. A mean (SD) marginal bone loss of -0.91 (1.50) mm was recorded during the observation period. No signs of infection around the implants were detected at any follow-up visit. There was a tendency towards less bone loss with the flapless protocol, -0.74 (1.34) mm, versus flap, -1.02 (1.60) mm, and less bone loss for single, -0.55 (1.52) mm, versus multiple restorations, -0.86 (1.24) mm, with the flapless approach.

CONCLUSIONS:

A high 1-year survival rate was achieved for immediately placed and immediately/early-loaded implants in the maxilla, despite the presence of infection in the location of the extracted teeth.

PMID: 17618939
[PubMed - indexed for MEDLINE]

Microbiologic evaluation of compromised periodontal sites before and after immediate intrasocket implant placement.

Tripodakis AP, Nakou M.

Source

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Abstract

This study aimed to elucidate the changes in subgingival microflora before the extraction of severely periodontally involved teeth and 1 year after immediate implant placement and provisionalization without flap elevation. Clinical parameters were recorded for 20 maxillary anterior teeth from 10 individuals before and after implant treatment. The clinically observed improvement in the soft tissues was found to be compatible with a less pathogenic flora. Concentrations of periodontopathogens in the periodontal sites were heavily reduced when transformed into peri-implant sites, whereas the relevant counts of the beneficial microorganisms were increased.

Retrospective analysis of implant survival and the influence of periodontal disease and immediate placement on long-term results.

Abstract

PURPOSE:

The purpose of this study was to investigate the cumulative survival rates of dental implants placed in a private periodontal practice and the effects of periodontal disease and immediate placement on implant survival.

MATERIALS AND METHODS:

A retrospective chart review was conducted on 149 consecutive patients. Each patient had a single implant placed. For the purpose of analysis, patients were divided into 2 groups: those who were periodontally healthy and those who had periodontal disease. Implants were placed into available bone either immediately or after a healing period. All failed implants were removed and recorded. The effects of periodontal status and placement time on implant survival were evaluated using Cox proportional hazards regression and log-rank tests.

RESULTS:

Of the 149 implants in the study, 22 failed during the observation period. The 127 censored cases (i.e., implants that had not failed at the end of the observational period) were observed for a mean of 943 days (SD 932, range 35 to 4,030). Failed implants were observed for a mean of 722 days (SD 1,026, range 18 to 3,548). The presence of periodontal disease appeared to be associated with a greater failure rate, but there was no observed effect associated with time of placement. The percentages of censored immediate placement cases and delayed placement cases were nearly identical. Among the 77 implants associated with periodontal disease, placement time was not strongly associated with percentage censored. Forty-three of the 55 immediately placed implants (78.18%) and 18 of the 22 implants (81.18%) whose placement was delayed were censored. Both Cox proportional hazards regression and log-rank tests established that survival was adversely affected by periodontal disease (P < .05) but unaffected by time of placement (P > .50). The lower 1-sided 95% confidence limit for median survival time was 3,548 days for patients without periodontal disease and 1,799 days for patients with disease.

DISCUSSION AND CONCLUSION:

Implant survival was compromised by a history of periodontitis but not affected by immediate or delayed placement.

Implants placed in immediate function in periodontally compromised sites: a five-year retrospective and one-year prospective study.

Malo P, de Araujo Nobre M, Rangert B.
Abstract

STATEMENT OF PROBLEM:

Placing implants in periodontally compromised sites is generally considered a risk factor. Good results have been reported when rehabilitating partial or complete edentulous sites in patients with a history of periodontitis. However, there is a need for more documentation of this treatment modality.

PURPOSE:

The purpose of this study was to report, retrospectively, on the placement of implants in periodontally compromised areas of the maxilla and mandible without a prior healing period and in immediate function. This study also presents a prospective preliminary 1-year report using a standardized clinical protocol, including a regenerative surgical procedure, control of the inflammatory response, a maintenance protocol, and use of an implant with an oxidized surface.

MATERIAL AND METHODS:

The clinical study encompassed 184 consecutively included patients with 433 implants (165 with a machined surface and 268 with an oxidized surface) placed in immediate function (140 in the maxilla and 293 in the mandible) supporting 218 fixed prostheses. Two groups were defined: the Retrospective group (using an unstandardized surgical technique and a majority of machined surface implants) with a retrospective approach and the Prospective group (using standardized surgical and maintenance protocols and oxidized surface implants) with a prospective approach. The 2 groups were evaluated for implant survival, clinical implant stability, bone resorption, absence of radiolucent areas around implants on the radiographs, and patient-reported function of the implants. Definitive prostheses were placed 6 months after the surgery. The data was analyzed using descriptive statistics.

RESULTS:

Thirteen implants were lost in 9 patients, providing a cumulative survival rate of 91% at 5 years for the Retrospective group. In the Prospective group, a 100% cumulative survival rate was recorded after 1 year. The average bone resorption (SD) was 1.2 mm (0.9 mm) and 1.1 mm (1.1 mm) after the first year for the Retrospective and Prospective groups, respectively, and 1.7 mm (1.0 mm) for the Retrospective group after the fifth year of function.

CONCLUSIONS:

The cumulative survival rate of 91% at 5 years for the Retrospective group is low compared to protocols for noncompromised situations, but the use of a standardized protocol together
with oxidized surface implants seems to improve the treatment outcome and bring the survival rate to levels comparable to noncompromised situations.

PMID:

17618938
[PubMed - indexed for MEDLINE]